

# Grilamid® XE 3915

Polyamide 12

EMS-GRIVORY

Message:

Grilamid® XE 3915 is a Polyamide 12 (Nylon 12) material. It is available in Africa & Middle East, Asia Pacific, Europe, Latin America, or North America for injection molding.

Important attributes of Grilamid® XE 3915 are:

Flame Rated

RoHS Compliant

Typical applications include:

Automotive

Electrical/Electronic Applications

Appliances

Consumer Goods

Engineering/Industrial Parts

| General Information       |      |                                    |                   |             |
|---------------------------|------|------------------------------------|-------------------|-------------|
| Uses                      |      | Appliance Components               |                   |             |
|                           |      | Automotive Applications            |                   |             |
|                           |      | Automotive Exterior Parts          |                   |             |
|                           |      | Connectors                         |                   |             |
|                           |      | Consumer Applications              |                   |             |
|                           |      | Electrical/Electronic Applications |                   |             |
|                           |      | Engineering Parts                  |                   |             |
|                           |      | Household Goods                    |                   |             |
|                           |      | Hydraulic Applications             |                   |             |
|                           |      | Industrial Applications            |                   |             |
|                           |      | Medical Devices                    |                   |             |
|                           |      | Power/Other Tools                  |                   |             |
|                           |      | Sporting Goods                     |                   |             |
| RoHS Compliance           |      | RoHS Compliant                     |                   |             |
| Forms                     |      | Granules                           |                   |             |
| Processing Method         |      | Injection Molding                  |                   |             |
| Physical                  | Dry  | Conditioned                        | Unit              | Test Method |
| Density                   | 1.47 | --                                 | g/cm <sup>3</sup> | ISO 1183    |
| Molding Shrinkage         |      |                                    |                   | ISO 294-4   |
| Across Flow               | 0.50 | --                                 | %                 |             |
| Flow                      | 0.10 | --                                 | %                 |             |
| Water Absorption          |      |                                    |                   | ISO 62      |
| Saturation, 23°C          | 0.80 | --                                 | %                 |             |
| Equilibrium, 23°C, 50% RH | 0.40 | --                                 | %                 |             |
| Hardness                  | Dry  | Conditioned                        | Unit              | Test Method |

|                                        |                         |                    |                   |                      |
|----------------------------------------|-------------------------|--------------------|-------------------|----------------------|
| Shore Hardness (Shore D, 15 sec)       | --                      | 82                 |                   | ISO 868              |
| Ball Indentation Hardness              | --                      | 155                | MPa               | ISO 2039-1           |
| <b>Mechanical</b>                      | <b>Dry</b>              | <b>Conditioned</b> | <b>Unit</b>       | <b>Test Method</b>   |
| Tensile Modulus                        | 13000                   | 11500              | MPa               | ISO 527-2            |
| Tensile Stress (Break)                 | 155                     | 135                | MPa               | ISO 527-2            |
| Tensile Strain (Break)                 | 6.0                     | 6.0                | %                 | ISO 527-2            |
| <b>Impact</b>                          | <b>Dry</b>              | <b>Conditioned</b> | <b>Unit</b>       | <b>Test Method</b>   |
| Charpy Notched Impact Strength         |                         |                    |                   | ISO 179/1eA          |
| -30°C                                  | 16                      | 15                 | kJ/m <sup>2</sup> |                      |
| 23°C                                   | 21                      | 20                 | kJ/m <sup>2</sup> |                      |
| Charpy Unnotched Impact Strength       |                         |                    |                   | ISO 179/1eU          |
| -30°C                                  | 85                      | 80                 | kJ/m <sup>2</sup> |                      |
| 23°C                                   | 85                      | 80                 | kJ/m <sup>2</sup> |                      |
| <b>Thermal</b>                         | <b>Dry</b>              | <b>Conditioned</b> | <b>Unit</b>       | <b>Test Method</b>   |
| Heat Deflection Temperature            |                         |                    |                   |                      |
| 1.8 MPa, Unannealed                    | 165                     | --                 | °C                | ISO 75-2/A           |
| 8.0 MPa, Unannealed                    | 125                     | --                 | °C                | ISO 75-2/C           |
| Continuous Use Temperature             |                         |                    |                   | Internal Method      |
| -- <sup>1</sup>                        | 90.0 to 120             | --                 | °C                |                      |
| -- <sup>2</sup>                        | 150                     | --                 | °C                |                      |
| Melting Temperature <sup>3</sup>       | 178                     | --                 | °C                | ISO 11357-3          |
| CLTE                                   |                         |                    |                   | ISO 11359-2          |
| Flow                                   | 1.5E-5                  | --                 | cm/cm/°C          |                      |
| Transverse                             | 1.2E-4                  | --                 | cm/cm/°C          |                      |
| <b>Electrical</b>                      | <b>Dry</b>              | <b>Conditioned</b> | <b>Unit</b>       | <b>Test Method</b>   |
| Surface Resistivity                    | --                      | 1.0E+12            | ohms              | IEC 60093            |
| Volume Resistivity                     | --                      | 1.0E+13            | ohms·cm           | IEC 60093            |
| Electric Strength                      | --                      | 35                 | kV/mm             | IEC 60243-1          |
| Comparative Tracking Index             | --                      | 600                | V                 | IEC 60112            |
| <b>Flammability</b>                    | <b>Dry</b>              | <b>Conditioned</b> | <b>Unit</b>       | <b>Test Method</b>   |
| Flammability Classification (0.800 mm) | HB                      | --                 |                   | IEC 60695-11-10, -20 |
| <b>Additional Information</b>          | <b>Dry</b>              | <b>Conditioned</b> |                   | <b>Test Method</b>   |
| ISO Type                               | PA12, MHR, 18-120, GF50 | --                 |                   | ISO 1874             |
| <b>NOTE</b>                            |                         |                    |                   |                      |
| 1.                                     | Long Term               |                    |                   |                      |
| 2.                                     | Short Term              |                    |                   |                      |
| 3.                                     | 10°C/min                |                    |                   |                      |

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